

MISSOURI. Conservationist

VOLUME 77, ISSUE 2, FEBRUARY 2016 • SERVING NATURE & YOU



A Job Well Done: Conservation Volunteers

ast summer, my son and several of his friends took a hunter education class and skills session. I was amazed by the passion and interest of the class volunteer instructors. They've probably taught

this class a hundred times, but they were still excited about teaching new hunters. I see the same excitement in conservation volunteers at Department nature centers and staffed shooting ranges or when I see a picture of a Stream Team cleaning up a small creek. Department volunteers love what they do.

Volunteering can be a great experience. It fosters community support, helps save precious resources, makes a difference, and much more. It also gives volunteers an opportunity to learn more about themselves, stay active in the community, and develop new friendships.

Volunteers are an important part of the work the Department does each year. They provide essential training to future hunters, anglers, and birdwatchers; offer a smiling face or helpful hand at a nature center or shooting range; and help complete habitat work or bird monitoring on conservation areas. Looking back over the past year, the accomplishments of conservation volunteers cannot be overlooked in helping advance conservation. A few examples include:

- Hunter Education Program: Volunteer instructors contributed more than 13,000 hours and helped complete 1,080 classes. This is one reason why Missouri is a national leader in hunter recruitment.
- Stream Teams: Currently there are 4,088 active Stream Teams that donated 132,984 hours of service during the 25th anniversary year of this incredible program.
- Missouri Master Naturalist: Last year 12 community-based chapters donated more than 62,000 hours to conservation projects from bird monitoring to tree planting to native seed collection.
- Volunteers at nature centers, staffed shooting ranges, and interpretative centers contributed over 60,000 hours of service by leading programs and helping visitors at Department facilities.
- 126 protection volunteers donated nearly 7,000 hours of service this past year, assisting conservation agents with various educational programs, wildlife surveys, and media events.



- The Missouri Forestkeepers Network spent more than 5,500 hours on activities such as tree plantings, forest monitoring, and habitat management.
- Discover Nature — Fishing Program helped teach nearly 6,000 novice anglers in 329 fishing classes in both urban and rural Missouri.

A sincere thank you to our conservation volunteers who make a difference by helping advance conservation in Missouri.

I encourage each of you to consider becoming a conservation volunteer. To find an opportunity that matches your interests, skills, and schedule, visit on.mo.gov/IjPHkOA to learn more.

Aaron Jeffries, deputy director

FEATURES

10 **The Plight of the Pollinator**

by Bill White

Pollinators are in decline in Missouri, but with a little effort, you can help turn the tide for these important animals

16 **Missouri's Winter Wonderland**

by Candice Davis

Winter in Missouri is too rich with activity to stay indoors

24 **The Evening Show**

by Scott Sudkamp

This month, head to the nearest brushy area to catch the woodcock's mating display

Cover: The tufted titmouse is one of several birds you will see in Missouri during the winter months. Photograph by Noppadol Paothong.

📷 600mm lens + 2.0 teleconverter •

f/8 • 1/400 sec • ISO 800

DEPARTMENTS

2 **Letters**

4 **Hunting & Fishing Calendar**

5 **Ask MDC**

6 **News & Events**

30 **Plants & Animals**

32 **Places to Go**

33 **Discover Nature**

WHAT IS IT?

Our photographers have been busy exploring the intricacies of outdoor Missouri. See if you can guess this month's natural wonder. The answer is revealed on Page 8.



NIGHT PHOTOGRAPHY

Your magazine always has beautiful nature photographs; however, the night photography in this month's issue [*Discovering Nature at Night*; December] are absolutely amazing!

Judy Cook, St. Genevieve

The cover photo and all the night photos by Dan Zarlenga in the December 2015 issue are fabulous. Usually it is only my husband who loves every little bit of the magazine. This time I was bowled over by the beauty and uniqueness of these photos.

Cynthia Bolinger, Warsaw

Congratulations to Dan Zarlenga and the *Conservationist* for the outstanding article *Discovering Nature at Night*.

Many Missourians live in areas where such views of the night sky are impossible due to light pollution. Hopefully, this article will encourage

Missourians to visit their conservation areas, state parks, and other areas where they can enjoy the beauty of the night sky.

The article helps to fulfill the Department mission of "Working for Nature and You" in yet another way.

Bill Palmer, Ashland

I really enjoyed your article in the December issue on *Discovering Nature at Night*. We live in Wentworth and there are repeated occasions that we enjoy the sky at night. We also enjoy the blooming of the wildflowers throughout the year. Keep up the good work of making your magazine enjoyable to the citizens of Missouri.

Jerry O'Neill, Wentworth

Thank you for the December issue. I found Dan Zarlenga's creative night photos fantastic! He is truly an artist.

My husband enjoyed the *Wondrous Wetlands*

article and especially the pictures of Mingo "Swamp," his term, as they took him back to his youth, hunting oversized rabbits with his father.

Philip and Carole Schaefer, via email

RESCUE DOGS

I am writing in reference to *Sporting-Dog Rescue* [December; Page 10]. I am 80 years old and hunt quail in your conservation areas every year. They are the only thing I hunt anymore. My hunting buddy and his dog moved away last year, and I really miss having a bird dog.

Roland Brooks, Montreal

Author's Note: If you are interested in rescuing a sporting dog, common breeds like vizslas (vcaweb.org/rescue/contacts.shtml), German shorthair pointers (gsp-ca.org/Rescue/regional.html), German wirehair pointers (nationalgwprescue.com/Adoptable-GWPs.html), pointers (pointerrescue.org/available.html), setters (esrescue.org/), and labradors (mlrr.org/) have their own websites. If you are looking for another breed, simply type the word rescue and the desired breed's name into your search engine and you should find more information. Another option is petfinder.com. Happy hunting!

Great information and help for the field dog lovers. My family stumbled on the Deutch-drahthaar while stationed in Germany. What a fantastic animal all wrapped up in a woolly coat! Axel-von-der-Verpel became a do-everything dog, mostly family-oriented. Thanks for the great article!

Mary O'Gorman, via email



Reader Photo

MORNING COFFEE SPOT

Mark Ziegler submitted this photo of Dry Fork Creek, which runs through his property in Phelps County. "My wife and I bought the property south of St. James and returned home to Missouri in 2012 after being away for 28 years," said Ziegler. He calls this location on the property their morning coffee spot. "It's a walk down the hill, along a path, to get there," said Ziegler. "When we first bought the land, before we started building the house, we would often walk there and have coffee. In the spring and early summer, the bottomland looks like the set of a fairy-tale movie. It is heavily wooded but grassy rather than thick underbrush. There are flowers everywhere!"

CORRECTION

In *Archery in the Schools Program Builds Champions*, Page 16 of the January issue, we misspelled the name of Sarcoxie R-II fifth-grader Max Wangler, who took first place at the National Archery in the Schools Program/International Bowhunting Organization 3-D Challenge national tournament in Kentucky.



DEPARTMENT HEADQUARTERS

Phone: 573-751-4115

Address: PO Box 180,
Jefferson City 65102-0180

REGIONAL OFFICES

Southeast/Cape Girardeau: 573-290-5730

Central/Columbia: 573-815-7900

Kansas City: 816-622-0900

Northeast/Kirksville: 660-785-2420

Southwest/Springfield: 417-895-6880

Northwest/St. Joseph: 816-271-3100

St. Louis: 636-441-4554

Ozark/West Plains: 417-256-7161

SUBSCRIPTIONS

Phone: 573-522-4115, ext. 3856 or 3249

Address: Circulation, PO Box 180, Jefferson City 65102-0180

Email: Subscriptions@mdc.mo.gov

Conservationist online services: Subscribe to the magazine, update your mailing address, or sign up to receive an email when the latest issue is available online at on.mo.gov/1E6osBA

Cost of subscriptions: Free to Missouri households

Out of State \$7 per year

Out of Country \$10 per year

Please allow 6-8 weeks for delivery of your first issue.

ASK MDC

Phone: 573-522-4115, ext. 3848

Address: Ask MDC, PO Box 180,
Jefferson City 65102-0180

Email: AskMDC@mdc.mo.gov

EDITORIAL COMMENTS

Phone: 573-522-4115, ext. 3847

Address: Magazine Editor, PO Box 180,
Jefferson City 65102-0180

Email: Magazine@mdc.mo.gov

READER PHOTO SUBMISSIONS

Flickr: [flickr.com/groups/mdc-readerphotos-2016/](https://www.flickr.com/groups/mdc-readerphotos-2016/)

Email: Readerphoto@mdc.mo.gov

Address: Missouri Conservationist, Reader Photo,
PO Box 180, Jefferson City 65102-0180

MDC Online

Discover more about nature and the outdoors through these sites.

Blog: mdc.mo.gov/blogs

Facebook: [facebook.com/MDOnline](https://www.facebook.com/MDOnline)

Flickr: [flickr.com/photos/mdc_online](https://www.flickr.com/photos/mdc_online)

Instagram: [instagram.com/moconservation](https://www.instagram.com/moconservation)

Kids' site: XplorMo.org

Missouri Conservationist: mdc.mo.gov/conmag

Missouri Department of Conservation: mdc.mo.gov

Nature Shop: mdcnatureshop.com

Twitter: twitter.com/MDC_Online and [Nature_Videos](https://twitter.com/Nature_Videos)

YouTube: [youtube.com/user/moconservation](https://www.youtube.com/user/moconservation)

MISSOURI. Conservationist

GOVERNOR Jeremiah W. "Jay" Nixon

THE CONSERVATION COMMISSION

Don C. Bedell

James T. Blair, IV

Marilynn J. Bradford

David W. Murphy

Director Robert L. Ziehmer

Deputy Director Thomas A. Draper

Deputy Director Aaron Jeffries

Deputy Director Jennifer Battson Warren

General Counsel Jennifer Frazier

Internal Auditor Lisa Wehmeyer

DIVISION CHIEFS

Administrative Services Margie Mueller

Design and Development Jacob Careaga

Fisheries Brian Canaday

Forestry Lisa G. Allen

Human Resources Thomas Neubauer

Outreach & Education Joanie H. Straub

Private Land Services Bill White

Protection Larry D. Yamnitz

Resource Science Mike Hubbard

Wildlife Jason Summers

CONSERVATIONIST STAFF

Editor Angie Daly Morfeld

Art Director Cliff White

Associate Editor Bonnie Chasteen

Staff Writer Heather Feeler

Staff Writer Kristie Hilgedick

Photographer Noppadol Paothong

Photographer David Stonner

Designer Les Fortenberry

Designer Marci Porter

Designer Stephanie Thurber

Circulation Laura Scheuler

The Missouri Conservationist (ISSN 0026-6515) is the official monthly publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: PO Box 180, Jefferson City, MO 65102.) Subscription free to adult Missouri residents; out of state \$7 per year; out of country \$10 per year. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Missouri, and at additional entry offices. Postmaster: Send correspondence to Circulation, PO Box 180, Jefferson City, MO 65102-0180. Phone: 573-522-4115, ext. 3856 or 3249. Copyright © 2016 by the Conservation Commission of the State of Missouri.

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, national origin, sex, age, or disability. Questions should be directed to the Department of Conservation, PO Box 180, Jefferson City, MO 65102, 573-751-4115 (voice) or 800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

Printed with soy ink



KIDS' MAGAZINE

Six times a year we'll bring you eye-popping art, photos, and stories about Missouri's coolest critters, niftiest natural places, and liveliest outdoor activities. Come outside with us and XPLOR!

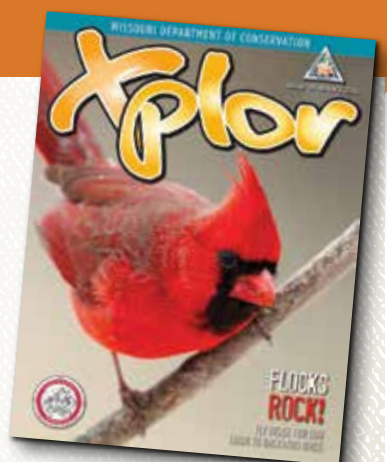
A Parents' Choice Approved Award Winner

Missouri residents: FREE (one subscription per household)

Out of state: \$5 per year; Out of country: \$8 per year

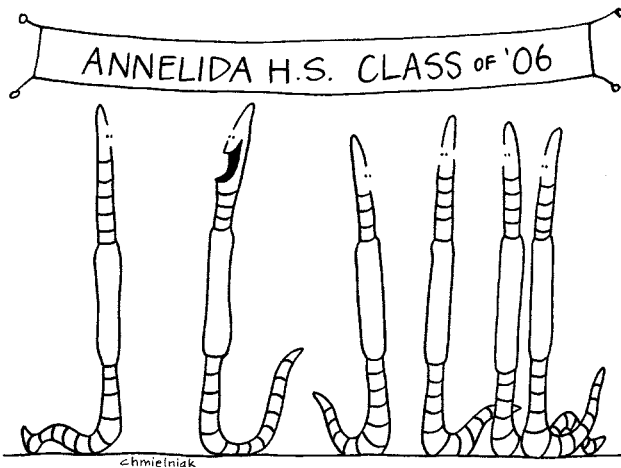
A guardian's name and address is required with the subscription.

Please allow 6-8 weeks for delivery of your first issue.



SIGN UP NOW!

xplormo.org | 573-522-4115, ext. 3856 or 3249



"Hey, I know you! I can't remember your name, but I never forget a face."

United States Postal Service Statement of Ownership, Management, and Circulation

(PS form 3526, July 2014)

Published annually in the February edition of this magazine as required by the United States Postal Service.

- 1) Publication Title: *Missouri Conservationist*
- 2) Publication Number: 354-960
- 3) Filing Date: 10/12/15
- 4) Issue Frequency: Monthly
- 5) Number of Issues Published Annually: 12
- 6) Annual Subscription Price: Free In-State
- 7) Complete Mailing Address of Known Office of Publication: Missouri Department of Conservation; PO Box 180; Jefferson City, MO 65102-0180; Contact Person: Shawn Cunningham; Telephone: 573-522-4115
- 8) Complete Mailing Address of Headquarters or General Business Office of Publisher: Same as above
- 9) Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor:
Publisher: Missouri Department Of Conservation; PO Box 180; Jefferson City, MO 65102-0180;
Editor: Angie Morfeld; PO Box 180; Jefferson City, MO, 65102-0180
- 10) Owner: Missouri Department Of Conservation (Shawn Cunningham); PO Box 180; Jefferson City, MO 65102-0180
- 12) Tax Status: The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes has not changed during preceding 12 months.
- 14) Issue Date for Circulation Data Below: September 2015
- 15) Extent and Nature of Circulation
 - a. Total Number of Copies (Net press run):603,041
 - b. Paid Circulation (By Mail and Outside the Mail):
 - (1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541:0
 - (2) Mailed In-County Paid Subscriptions Stated on PS Form 3541:0
 - (3) Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS:0
 - (4) Paid Distribution by Other Classes of Mail Through the USPS:7,921
 - c. Total Paid Distribution:7,921
 - d. Free or Nominal Rate Distribution (By Mail and Outside the Mail):
 - (1) Free or Nominal Rate Outside-County Copies Included on PS Form 3541:595,120
 - (2) Free or Nominal Rate In-County Copies Included on PS Form 3541:0
 - (3) Free or Nominal Rate Copies Mailed at Other Classes Through the USPS:0
 - (4) Free or Nominal Rate Distribution Outside the Mail (Carriers or other means):0
 - e. Total Free or Nominal Rate Distribution:595,120
 - f. Total Distribution:603,041
 - g. Copies not Distributed:2,000
 - h. Total:605,041
 - i. Percent Paid:1.4%
- 16) Electronic Copy Circulation
 - a. Paid Electronic Copies:0
 - b. Total Paid Print Copies:7,921
 - c. Total Print Distribution:605,041
 - d. Percent Paid1.4%
- 18) Signature and Title of Editor, Publisher, Business Manager, or Owner: I certify that all information furnished on this form is true and complete. Shawn Cunningham, Distribution Manager, 10/12/15

HUNTING & FISHING CALENDAR

FISHING	OPEN	CLOSE
Black Bass from Ozark Streams	05/23/15	02/29/16
Nongame Fish Giggling		
Impounded Waters	All year	None
Paddlefish	03/15/16	04/30/16
Trout Parks		
Catch-and-Release	11/13/15	02/08/16
Catch-and-Keep	03/01/16	10/31/16
HUNTING	OPEN	CLOSE
Coyote (restrictions apply during April, spring turkey season, and firearms deer season)	All year	None
Crow	11/01/15	03/03/16
Deer		
Archery	09/15/16 11/23/16	11/11/16 01/15/17
Firearms		
Early Youth Portion	10/29/16	10/30/16
November Portion	11/12/16	11/22/16
Late Youth Portion	11/25/16	11/27/16
Antlerless Portion (open areas only)	12/02/16	12/04/16
Alternative Methods Portion	12/24/16	01/03/17
Rabbit	10/01/15	02/15/16
Squirrel	05/23/15	02/15/16
Turkey		
Firearms		
Youth	04/09/16	04/10/16
Spring	04/18/16	05/08/16
Fall	10/01/16	10/31/16
Waterfowl	see the <i>Waterfowl Hunting Digest</i> or on.mo.gov/1DChcmi	

TRAPPING	OPEN	CLOSE
Beaver and Nutria	11/15/15	03/31/16
Otters and Muskrats	11/15/15	02/20/16

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, *the Fall Deer and Turkey Hunting Regulations and Information*, *the Waterfowl Hunting Digest*, and *the Migratory Bird Hunting Digest*. For more information, visit on.mo.gov/1Ulcnlw or permit vendors.

Operation Game Thief

Help put game thieves out of business. If you see a possible violation in progress, call your county conservation agent immediately or dial the toll-free number below:

1-800-392-1111

All information is kept in strict confidence. Desirable information includes names of violators, vehicle description and license number, as well as the violation location.

Ask MDC

Address: PO Box 180, Jefferson City, MO 65102-0180
Phone: 573-522-4115, ext. 3848 Email: AskMDC@mdc.mo.gov



Comb tooth mushroom

My husband found this mushroom or fungus growing out of this old log recently and neither one of us has ever seen anything like it. It was beautiful and reminded me of frost. What is it?

This branched, whitish mushroom is commonly known as a comb tooth (*Hericium coralloides*).

It's considered a choice edible mushroom by collectors. However, it is only tasty when young and fresh. It gets sour and bitter as it over-matures.

The fruiting body, which can range in size from 3 to 6 inches across when fully developed, typically is found on tree wounds, decayed branch stubs, or the

ends of fallen, decaying deciduous logs in the autumn.

The fleshy branches of the mushroom, covered with hanging, tooth-like spines, are its most defining feature.

Comb tooth mushrooms are occasionally confused with bearded tooth mushrooms (*Hericium erinaceus*), which are also edible. Both share similar habitats and are whitish to cream-colored mushrooms when fresh.

This bird, and another, flew into our sunroom. His friend got out quickly, but he remained, flying into the windows several times. I was able to pick

him up gently and sit with him in my hand for a few minutes. He seemed dazed, but regained his composure and flew off. Can you tell us what kind of bird this is?

This is a Carolina wren (*Thryothorus ludovicianus*).

These common, hardy birds have been wintering farther north in recent decades and can be found year-round in Missouri's forests, woodlands, and residential areas.

Their small size and streaky brown plumage makes them hard to see outdoors, but certainly not hard to hear. With loud teakettle exclamations, Carolina wrens defend their territories and scold away interlopers. If you follow their call, you might catch a glimpse of their cinnamon plumage, white eyebrow stripes, cocked-up tails, and slender, down-curved beaks. To hear their familiar call, visit allaboutbirds.org and type "Carolina wren" in the search bar.

Unfortunately, window strikes are all too common. However, there are steps homeowners can take to prevent and reduce them. To learn more, visit bit.ly/1Moh3l9.



Carolina wren



Montauk State Park

Heavy Rains Cause Flooding Across Missouri

Heavy rains and flash flooding that paralyzed much of the state in late December also affected the Department of Conservation.

In the southwest and Ozark regions, conservation agents performed several swift-water rescues while assisting local and state law enforcement officers. One vehicle was flooded and a swift-water rescue boat also was damaged.

The George O. White State Tree Nursery suffered losses when parts of the nursery's field beds were submerged.

Across the state, several conservation areas closed due to high water and road damage. Peck Ranch, Caney Mountain, and Drury-Mincy conservation areas were closed in response to flash flooding. Although most of the major waterfowl areas in northern Missouri were spared the worst of the storm, Schell-Osage Conservation Area was almost completely flooded.

But the state's fisheries bore the brunt of the storm. Staff at the state's five coldwater hatcheries worked around the clock to keep the trout alive. At Maramec Spring Fish Hatchery, the dam surrounding the spring was breached. Three

employees at Roaring River Fish Hatchery were unable to leave due to high water blocking the hatchery complex. At Shepherd of the Hills Fish Hatchery where releases from Table Rock Lake were at record levels, floodwaters approached the base of the brown trout building. And at Bennett Spring Fish Hatchery, the Niangua River rose so high that the entire complex was flooded.

"Instead of having multiple production pools, we had one large pool," Fisheries Field Operations Chief Bruce Drecktrah explained.

Several steps taken before the flooding occurred likely saved thousands of fish. At Montauk Hatchery, a recirculation system — which allows hatchery staff to block out debris-laden river water, while still maintaining flow — helped prevent losses, Drecktrah said. And at Maramec Spring Hatchery, screen covers kept fish in the raceways, even when they were overflowing their banks.

According to the Missouri Climate Center, 2015 was the fourth wettest on record with an average statewide annual total precipitation of just over 55 inches.

New Permit System to Launch

A new permit system designed to help outdoor enthusiasts purchase hunting and fishing permits with ease and speed is slated to launch by this summer.

"This new system will allow easy, online access for the purchase of permits, anytime and anywhere," said Permit Services Supervisor Greg Jones, who retired in December.

The system serves more than 1 million customers and works with the assistance of approximately 1,000 retailers across the state.

The new system is expected to make the permitting process more convenient for permit buyers, waste less paper, and save the state money.

As part of the implementation process, the Department eliminated the \$1 convenience fee formerly charged by the vendor to customers who bought their permits online. A \$2 convenience fee for phone sales will remain.

Regardless of where a customer purchases a permit, each document will look the same statewide, Jones added. The new system also allows vendors to condense up to three permits on the same page, eliminating paper waste and bulk.

Similar technology has been tested and embraced elsewhere, Jones said.

"Permit sales are a very important function of the Department, and we've carefully worked with vendors on the new system," Jones said.

The contract was awarded to a company with Missouri ties and will be managed in state. The close-to-home contract will also lower annual costs for the Department due to reduced maintenance and equipment costs.

Report All Sightings of Feral Hogs

The Department continues to work with elected officials, community groups, partner agencies, and landowners to raise awareness of feral hogs and eradicate them from the landscape.

Experience gleaned from other states and trends in Missouri show hunting does not help to eradicate hogs. Instead, hunting results in expanded populations. Hunting and shooting scatters groups of hogs, or sounders, whereas eradication efforts, like trapping, can eliminate an entire sounder at once. Feral hogs have a high reproductive rate. Sows can have up to two

litters every 12–18 months with an average of six piglets per litter, so elimination of entire sounders is necessary.

Eradication efforts, such as trapping, have increased this year, and citizens are asked to report feral hog sightings or damage as soon as possible.

"Feral hogs destroy habitat, eat wildlife, compete with native animals for food, degrade our water quality, and spread disease," explained Wildlife Regional Supervisor Matt Bowyer. "We ask Missourians to partner with the Department to ensure we reduce that destruction by reporting all sightings of feral hogs so we can work together to remove the threat."

Reynolds County landowner Don Kory and his family have trapped more than 190 feral hogs on their property with the help of the Department and the U.S. Department of Agriculture. Kory said landowners who haven't yet experienced feral hogs on their property sometimes don't understand the damage the animals cause. But after years of trapping and responding to the wreckage they leave behind, he knows the situation all too well.

"It seems many people think it would just be great fun to have 'wild boars' on your property to hunt," he said. "But if you are a landowner, I say be happy if you never see a feral pig."

To gain ground in the feral hog fight, people must stop hunting hogs and start reporting them, Bowyer said. Other states, such as Tennessee, Michigan, and Kansas, have experienced success by using this strategy.

"Feral hogs are highly adaptable and easily avoid trapping efforts when hunters encroach into their occupied area," explained Bowyer. "We're learning that hog hunting actually increases the spread of populations and pushes them into new territories, making their movements less predictable."

Bowyer asks anyone who encounters a feral hog to report the sighting to 573-522-4115, ext. 3296. Those who witness illegal release of hogs should immediately contact their local conservation agent or report it to Operation Game Thief at 1-800-392-1111. For more information about feral hog eradication efforts, visit on.mo.gov/1kqKpHC.



CONSERVATION COMMISSION ACTIONS

The December Commission meeting featured presentations and discussions regarding the Agricultural Crop Program, the Missouri Deer Survey Program, a report of the regulations committee, recommendations for the 2016–2017 fall deer/turkey season structure, methods, and limits, 2016 Missouri wild turkey hunting regulation recommendations, upcoming waterfowl/hunter public engagement meetings, major construction projects status report, 2016 permit system vendor changes, and information technology projects status report. A summary of actions taken during the Dec. 10–11 meeting for the benefit and protection of fish, forests, and wildlife and the citizens who enjoy them includes:

- » **Recognized** Conservation Agents Brian Ham, Doug Yeager, Adam Bracken, and Matthew Bryant (2015 Department Pistol Team) for awards received at the National Police Shooting Championships.
- » **Recognized** two work teams as recipients of the 2015 Department Workforce Diversity Award. Team members are: Conservation Agents Chris Campbell, Tammy Pierson, Marsha Jones, Chris Decoske, Brian Bartlett, Adam Doerhoff, Becky Robertson, Kearby Bridges, Christa Cox, Alan Lamb, Lexis Riter, Kevin Powell, and Protection Supervisor Jerry Elliott.
- » **Recognized** the 2015 Missouri 4-H Shooting Sports State Team for Top Overall Honors at the 4-H Shooting Sports National Championships. Representatives of the 36-member team in attendance were: Dalton Fisher, Nichole Gann, Seiler Johnson, Stewart McCollum, Cole Sandbothe, Leanna Schwartze, Jake Tanner, Levi Walker, and Hunter Weller.
- » **Recognized** Stewart McCollum as the Top Overall Individual in the Senior Division at the 2015 NRA International Youth Hunter Education Challenge.
- » **Approved** final recommendations for 2016–2017 fall deer/turkey season structure, methods, and limits.
- » **Approved** 2016 Missouri wild turkey hunting season regulation recommendations.
- » **Approved** recommendations for changes to the *Wildlife Code of Missouri* to limit the spread of Chronic Wasting Disease.
- » **Approved** entering into a contract for acquiring LiDAR and aerial photogrammetry of 34 conservation areas.
- » **Approved** an amendment to the negotiated agreement for design of the new Grand River Pump Station at Fountain Grove Conservation Area (CA) in Livingston County.
- » **Approved** an increase to the permit vendor commission rate effective upon implementation of the new electronic permit system.
- » **Approved** the exchange of 16 acres of Angeline CA in Shannon County for 9 acres in Shannon County as an addition to Angeline CA.
- » **Approved** the purchase of 14.69 acres in Jefferson County as an addition to Myron and Sonya Glassberg Family CA.
- » **Approved** the 2014–2015 annual report for the Department of Conservation.

The next Conservation Commission meeting is March 10 and 11. For more information, visit on.mo.gov/1li700p or call your regional Conservation office (phone numbers on Page 3).

(continued from Page 7)

New Opportunities for Outdoor Recreation

The Missouri Outdoor Recreational Access Program (MRAP), an initiative piloted by the Department last fall, provides landowners an opportunity to generate extra income by opening their property to the public for fish and wildlife-related recreational activities. In addition, special incentives are available to enhance wildlife habitat on MRAP properties.

Seven northeast and southeast counties were included in the pilot, and approximately 1,500 acres were enrolled in the program.

This summer, the Department will use federal funds from the U.S. Department of Agriculture's Voluntary Public Access and Habitat Incentive

Program, along with Department funding, to expand the program. To be eligible, sites must have 40 contiguous acres and meet certain standards for quality wildlife habitat. The exception is land offered for fishing access, which is not subject to the minimum acreage and habitat requirements.

Annual payment rates will be determined by the type of access provided by the landowner, amount of quality habitat available, and other factors. Most landowners can expect to earn \$15 to \$25 per acre each year that they participate.

Examples of quality habitat targeted by MRAP include native grass fields, wildlife-friendly field buffers, restored wetlands, enhanced woodlands, and old fields. Upon enrollment, landowners will be able to choose how their land will be used. The options include:

- All-access hunting and fishing
- Small game and turkey hunting
- Youth-only hunting and fishing
- Archery hunting
- Fishing
- Wildlife viewing

All MRAP lands will be open to foot traffic only, and area users must self-register at designated property entry points. Unless otherwise agreed upon by the landowner, parking will occur along roadsides, and public access will only be for the uses and activities agreed upon by the landowner. For those who have concerns about liability, Missouri's Recreational Use Immunity Law offers liability protection to participating landowners.

For more information, visit mdc.mo.gov/mrap. There you can find property enrollment information for landowners, area rules and procedures, and maps of enrolled properties. Landowners interested in participating should contact their local private land conservationist or MRAP Manager Jeff Esely at jeff.esely@mdc.mo.gov.

Department Sets Deer and Turkey Hunting Dates and Regulation Changes for the 2016–2017 Season

The Missouri Conservation Commission in December approved staff recommendations for the 2016–2017 deer hunting and 2016 turkey hunting seasons.

The recommendations established season dates, changed the allowed methods for both deer and turkey hunting, and altered the deer season structure.

Spring Turkey Hunting Dates

- Spring Youth Portion: April 9–10, 2016
- Spring Turkey Season: April 18–May 8, 2016

Fall Deer and Turkey Hunting Dates

- Archery Deer and Turkey: Sept. 15–Nov. 11, 2016 and Nov. 23, 2016–Jan. 15, 2017
- Firearms Turkey: Oct. 1–31, 2016
- Firearms Deer Early Youth Portion: Oct. 29–30, 2016
- Firearms Deer November Portion: Nov. 12–22, 2016
- Firearms Deer Antlerless Portion: Dec. 2–4, 2016
- Firearms Deer Alternative Methods Portion: Dec. 24, 2016–Jan. 3, 2017
- Firearms Deer Late Youth Portion: Nov. 25–27, 2016



WHAT IS IT?

Turkey Vulture | *Cathartes aura*

Turkey vultures are commonly seen in the southern half of Missouri during winter months. They hold their wings in a V position when soaring, and they frequently tilt from side to side when in the air. They are especially fond of bluffs, where they can catch rising warm air currents. These raptors roost in large colonies, generally in large, bare trees. Breeding occurs in spring, and turkey vultures lay eggs in caves, cliffs, crevices, hollow trees, or brushy thickets. There are usually two chicks per clutch. The helpless young hatch in 30–40 days and are fed by the parents for 10–11 weeks. Families stay together until fall. Turkey vultures forage individually and are highly specialized carrion feeders, locating their food by smell as well as by sight. They are often attracted to road-killed carcasses. As scavengers, turkey vultures perform a valuable service by cleaning up the woods, grasslands, and roadsides.

—photograph by Noppadol Paothong

DID YOU KNOW?

*We work with you and for you to sustain
healthy fish, forests, and wildlife*

Deer and Turkey Hunting Regulation Changes

The Commission approved the following regulations regarding deer and turkey hunting:

- Move and expand the late youth portion of the firearms deer season to three days, beginning the first Friday after Thanksgiving.
- Reduce the length of the antlerless portion of the firearms deer season from 12 to three days and begin it on the first Friday in December.
- Eliminate the urban-zones portion of the firearms deer season.
- Allow crossbows as a legal method during archery deer and turkey seasons.
- Allow the use of crossbows during the fall firearms turkey season.
- Remove the hunting method exemption requirement related to crossbows during the archery deer and turkey season.
- Reduce the limit of antlered deer from three to two during the combined archery and firearms deer hunting season, with no more than one antlered deer taken during the firearms deer hunting season.

The regulations will become effective March 2016.

The Commission initially approved the deer hunting regulations at its August 2015 public meeting followed by a public comment period.

Changes to the deer hunting season structure and methods come after Department efforts over the past 18 months to gather public input. That public input included hunter and landowner surveys, numerous public open houses around the state, community presentations, media communications, information in various Department publications, discussions with conservation partner organizations, and other efforts.

The approved recommendations were based on the Department's use of deer population simulations, biological data, and harvest information.

"The goal of the Conservation Department's deer management program is to use research-based wildlife management combined with public input to maintain deer population levels throughout the state that provide quality recreational opportunities while minimizing human-deer conflicts," said Wildlife Division Chief

Community Tree Care Programs

The Missouri Department of Conservation offers cost-share, help, and recognition for community tree care through several programs. Efforts for 2015 include the following:

» **Awarded** more than 48 Missouri communities \$496,003 in cost-share assistance that leveraged \$362,965 in local matching funds for tree inventory and maintenance through the Tree Resource Improvement and Maintenance (TRIM) program.

» **Recognized** 87 Missouri municipalities as Tree City USA communities last year. This program is run in partnership with the Arbor Day Foundation.

» **Recognized** seven colleges and universities as Tree Campus USA institutions. This program is run in partnership with the Arbor Day Foundation. Each institution has a campus tree advisory committee, a campus tree care plan, dedicated funding, provides an opportunity to engage the student population with projects related to trees, and celebrates Arbor Day.

» **Recognized** 11 Missouri utility providers as TreeLine USA companies for their tree-care efforts. The Conservation Department and Arbor Day Foundation jointly run this program.

» **Recognized** four entities including a county, an individual, a business, and an organization through the Missouri Arbor Award of Excellence program. The Conservation Department and the Missouri Community Forestry Council co-sponsor this program.

To learn more about and participate in the Conservation Department's community tree care programs, visit on.mo.gov/1NtdA4s.

Jason Sumners. "As deer populations in Missouri have changed over the past 75 years, so have our management strategies. In modifying the hunting season structure, our aim is to achieve a deer population that is biologically and socially acceptable, while also promoting hunter participation, recruitment, and retention."

For more information on deer and turkey hunting, visit mdc.mo.gov and click on the Hunting/Trapping menu.

Sign up for a Spring Managed Turkey Hunt

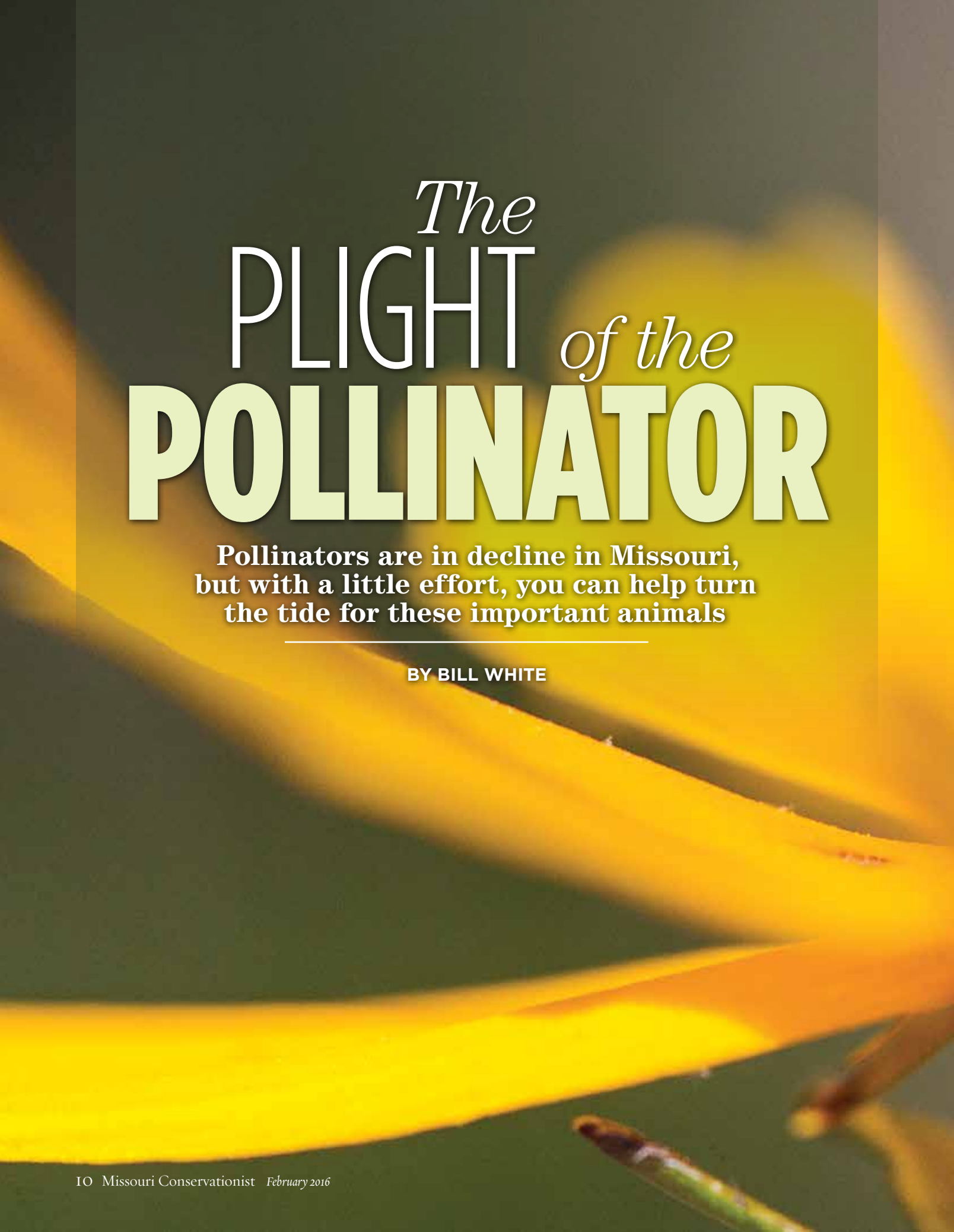
Missouri youth, archery, and firearms turkey hunters can apply online for managed hunts

during the 2016 spring turkey season. The sign-up period ends Feb. 29.

Details and application procedures for the managed hunts are outlined on the Department's web site at on.mo.gov/1mitQ2o.

Application results will be available beginning March 14.

More information on spring turkey hunting can be found in the Department's 2016 *Spring Turkey Hunting Regulations and Information* booklet, available by early February at mdc.mo.gov. Printed booklets will be available from permit vendors, Department offices, and nature centers by mid-February.



The PLIGHT *of the* POLLINATOR

**Pollinators are in decline in Missouri,
but with a little effort, you can help turn
the tide for these important animals**

BY BILL WHITE



Native sweat bees like this one gathering pollen from a coreopsis flower help pollinate domestic food crops as well as wildflowers, grasses, shrubs, and trees.

NOPPADOL PAOTHONG



Bumblebees are adapted to extract nectar from many native wildflowers, such as this blazing star.

AS A BOY, I KNEW BUMBLEBEES WERE FASTER than a tractor, and if I didn't want to get stung after disturbing their nest, I needed to jump off the tractor, run like the wind, and not look back. That was the most important thing I knew about pollinators. We had a farm with dairy cattle and lots of hayfields, and that meant we were sure to find a nest or two of bees every summer while mowing, raking, or baling. Since I was in charge of raking hay, I got to jump off the tractor and run often, so my long legs and hair proved beneficial when the bees went for my head. If I had to outrun bees today with my old legs and lack of hair, I would be in deep trouble.

But I wouldn't have to worry about running from a nest of bumblebees on that farm today because they disappeared many years ago. For reasons that are still unclear, we are seeing drastic declines in many pollinators across the country. This is unfortunate since they pollinate 75 percent of all plants producing food for human consumption. In addition, pollinators are vital to creating the habitats that most other animals rely on for food and shelter.

In Missouri, we have at least 450 species of native bees, including several species of bumblebees. There are 4,000 native bee species in North America, and on a worldwide scale, that number swells to between 20 and 30 thousand species of bees. Other animals that provide pollination include various species of birds, bats, flies, beetles, spiders, ants, moths, and butterflies. Native bees are thought to be the most efficient pollinators, even better than honeybees. For instance, a single blueberry bee can visit 50,000 flowers in its short lifetime, resulting in the production of 6,000 blueberries.

How Can We Help Pollinators?

Scientists believe the loss of native bees' habitat may be the key to their decline. They use many of the same habitats as bobwhite quail, rabbits, and grassland songbirds, which are also declining in the Midwest. The proof is in a study being conducted by the Department and the University of Missouri-Bradford Research and Extension Center near Columbia. In 2012, a new native wildflower planting was visited by just one native bumblebee species. In 2014, as the planting matured and more species of wildflowers bloomed, six species of native bees were documented. In 2015, two bumblebee nests were found in the planting.

Fortunately, whether you just have a backyard in the city or hundreds of acres in rural Missouri, you can help pollinators by providing for their habitat needs. Here are a few tips:

- Establish perennial native wildflower gardens with a minimum of 25 species. Pick a mix of species



Save the Monarch!

The monarch is an iconic insect species and perhaps the only butterfly that every Missourian knows by name. While the monarch isn't as effective at pollinating as native bees, what makes them unique and worth saving is they are the only insect in North America that migrates across three countries, one of the most spectacular natural phenomena in the world. While its wintering population in Mexico and California has seen long-term declines, the tragic decline in 2012 made national news and started discussions about whether the insect deserved endangered species status. Theories abound about the reason for the decline, but the plants they rely on the most, milkweed, are also in decline.

Starting in September and October, eastern/northeastern populations migrate from southern Canada and the United States to overwintering sites in central Mexico where they arrive around November. They start the return trip in March, arriving back here around July. No individual butterfly completes the entire round trip. Female monarchs lay eggs for the next generation during the northward migration and at least five generations are involved in the annual cycle. The last generation makes the trip south into Mexico and can live up to eight months.

The Association of Missouri Electric Cooperatives and the Conservation Federation of Missouri are teaming up with the Department of Conservation to ask Missourians to save the monarch. The effort is part of a statewide collaboration of agriculture organizations, agribusinesses, state and federal agencies, academia, conservation groups, and more.

You can help monarch populations recover by planting any species of native milkweed we find in Missouri, with particular emphasis on common milkweed, butterfly weed, and swamp milkweed. Do not plant scarlet or tropical milkweed (*Asclepias curassavica*) as this exotic plant is known to increase the transfer of a deadly parasite to monarchs.

Plants that provide nectar to monarchs, especially during their fall migration, are also critical. Fall blooming wildflowers, such as New England aster and eastern blazing star, are recommended. For more information on wildflower plants and seed, visit grownative.org.

Protect existing milkweed plants by not mowing during the growing season. Wait until October if you must mow. Avoid using broad-spectrum herbicides near milkweeds. Grass selective herbicides can be used over milkweeds to deter encroachment of nonnative grasses. Avoid burning from May 15 through mid-October.

For small-plot how-to instructions and sample planting designs, visit on.mo.gov/10AKcy6. For information on larger acreage plantings, visit 1.usa.gov/10Nflca, 1.usa.gov/22XnztF, and 1.usa.gov/1PUfwH6.

Ideal land for planting native wildflowers includes marginal cropland, such as areas next to wooded fence lines, corners of a center pivot irrigation system, or severely eroded areas that struggle to produce a crop each year. Odd idle areas, such as the fenced area around a live-stock pond, are also suggested.

Through state and federal agencies, limited cost-share financial resources are available to private landowners for planting grass and wildflower mixes to benefit monarchs and other pollinators. The U.S. Department of Agriculture (USDA) Farm Service Agency's Conservation Reserve Program offers several suggested plantings for pollinators and wildlife that can be used to benefit monarchs. The USDA Natural Resources Conservation Service also offers limited assistance for monarchs through several of their conservation programs. Contact your local USDA Service Center for additional information on these programs.



Progressive bee fly

that offer a variety of color and blooms throughout the growing season (April to October). According to research, native plants like grayhead coneflower, golden Alexanders, leadplant, and purple prairie clover are necessary for promoting bee diversity.

- Plant or manage for native flowering shrubs, such as false wild indigo and wild plum.
- Bee nest structures can be made for a number of bee species. See xerces.org and search for bee nest.
- Use native wildflower and shrub plantings to connect habitats, such as hedgerows, riparian areas, and brushy roadsides. Use unproductive areas on farms, such as center pivot irrigation corners and field borders sapped by trees in fence lines, for pollinators.



Red milkweed beetle



Snowberry clearwing moth



Pipevine swallowtail butterfly

- Edge feathering, the practice of chopping and dropping trees along hedgerows, can be used to increase the amount of downed dead wood and stumps for mason bees or yellow-faced bees.
- Maintain undisturbed areas of bare ground for miner bees and sweat bees. They make their nests in the ground and need an area free of plant litter to build their nest tunnel.
- Learn to identify and control invasive plants. Invasive species have a negative effect on the entire food chain. Research has shown there are 22 times fewer insects in a hedgerow made up of invasive and nonnative species than a hedgerow made up of native plants.
- Bumblebee nesting sites are typically found in native warm-season bunch grasses, such as little bluestem or prairie dropseed.
- Prescribed burning is useful in maintaining pollinator plantings and controlling some invasive species. Research shows prescribed burning increases bee ground-nesting because it reduces plant litter. To protect bees, burning should be conducted between October and February. No more than one-third of a field should be treated at any one time.
- Leave patches of lawn, field, or edge habitat untouched throughout the entire year. If mowing is necessary, do so with your blade raised to the highest height possible to avoid damaging nests or overwintering queen bumblebees. Some of the smallest bee species will overwinter in the stems of wildflowers and weeds.
- Don't forget to plant and protect pollinators' host plants, such as milkweeds for monarchs or spicebush for spicebush swallowtail butterflies.

There is room on every lawn and every farm in Missouri to improve habitat for pollinators. We depend on them to pollinate our food. Now they are depending on us to provide their habitat.

To learn more about what you can do to improve pollinators' habitat, visit xerces.org, pollinator.org, fws.gov/pollinators, kidsgardening.org, and fs.fed.us/wildflowers/pollinators. ▲

Bill White is the Department's Private Land Services division chief. He enjoys hunting, fishing, and camping with his family.

Pollinators need a diversity of native flowering plants to survive. Clockwise from the top left: columbine, spiderwort, rough blazing star, and common milkweed.



Landowner Success Story

Landowners Gail and Tom Rowley of Texas County felt an obligation to do more for wildlife on their small farm. Gail wanted to turn the old hayfields, full of invasive species like spotted knapweed, to something that would benefit pollinators and birds, knowing that providing habitat for pollinators would benefit every form of wildlife on the property.

In 2011, they started to convert a portion of their open fields to native grasses and wildflowers. To their amazement, there was a huge reservoir of help for landowners, including a local native seed dealer and the Department.

"This was a turning point that inspired us to do more," said Gail.

They learned how to improve wildlife diversity on their land by using prescribed fire, encouraging native plants already present, controlling invasive plant species, and planting native wildflowers, grasses, and legumes. The change made a huge difference in the number of pollinators and birds present.

"From the tiny flies that pollinate the native grass flowers to the countless butterflies and bees, we have identified well over 40 species of pollinators here."

Gail stresses that when planting for pollinators, we need "to provide habitat that includes caterpillar host plants, as well as nectar sources. Encouraging pollinators also encourages other beneficial insects, which in turn attack insect pests. It's like inviting a team to help us on the farm!"



Missouri's

winter wonderland

Winter in Missouri is too rich
with activity to stay indoors

BY CANDICE DAVIS

DREARY WINTER DAYS MAY make it seem like outdoor activities are on hold until spring, but that's not the case. Winter in Missouri brings a whole new perspective on our native wildlife as they eke out a living in the cold. Maple trees are ripe for tapping and trout fisheries are open and ready for anglers. No matter your level of ability, nature has a wonderland of activity available all winter long.



This snow at Earthquake Hollow Conservation Area offers a chance to look for tracks and other wildlife sign.

CLIFF WHITE



Trout fishing is a lively winter activity, as trout are known for putting up a fun fight.

Winter Trout Fishing Program

Anglers who put their fishing gear away after the summer months are missing out, according to Fisheries Management Biologist Mike Reed, who said there are many enjoyable aspects to winter trout fishing.

Reed said winter trout provide anglers an opportunity to catch fish when they typically are not fishing and have little other outdoor opportunities available.

The Missouri Department of Conservation stocks 31 areas in cities across the state for winter trout fishing, beginning in early November. In addition to catch-and-release fishing through January 31, many of these areas allow anglers to harvest trout as soon as they are stocked. Others allow catch-and-keep fishing as early as February 1.

“Trout fight hard, often jumping clear out of the water, which is pretty cool,” he said. “Also, numerous fish can be caught on a good day and they give anglers the opportunity to take fish with a variety of lures and methods, from challenging to simple.”

“Flies, which imitate aquatic insects, are popular with fly fishers,” he said, “but spinners, small spoons, and various small lures are also effective.”

Some basic equipment for trout fishing includes a hand net, stringer, waders or waterproof boots, a fishing vest to carry essentials, polarized sunglasses to reduce glare on the water, and a rod and reel. Reed said light line and tackle will typically catch more fish than heavier tackle. Successful anglers use 2- to 6-pound test line when fishing with lures, and add little or no additional weight to the line. Set the drag light as trout often hit hard and make strong runs, which can break weak or frayed line.

The daily limit for catch-and-keep at these locations is four trout with no length limit. All Missouri residents over age 15 and under 65 must have a valid fishing permit, and all nonresidents over age 15 must have a fishing permit. To keep trout, anglers of all ages must have a Missouri trout permit.

To find trout areas near you, visit mdc.mo.gov/fishing

Winter Really is for the Birds

Winter birds are like spring flowers — they add color and activity at a time that can be otherwise dreary. From tornadoes of geese swirling in the Bootheel sky to cardinals and blue jays at backyard feeders, bird activities can keep a nature-lover busy.

In the most southeastern part of Missouri, thousands of snow geese can be seen in the winter, soaring above the wetlands and crop fields. A drive to southern conservation areas such as Ten Mile Pond, Otter Slough, and Duck Creek can result in better waterfowl identification.

“February is a great time to see northern pintails, gadwalls, and American green-winged teal in the fields and mallards in the timber,” said Keith Cordell, manager of Duck Creek Conservation Area. “Duck Creek is a place where you can drive along the borders of the timber and fields and really get a good look at these ducks.”

In the opposite point of the state, the northwest region offers opportunities to see lots of waterfowl species once the wetlands thaw, according to Craig Crisler, manager of Nodaway Valley Conservation Area.

“Usually the wetlands are covered in ice until late February,” Crisler said. “Then we’ll see snow geese, mallards, Canada geese, pintails, and bald eagles.”

If waterfowl areas are too far to travel, backyard birding can be just as exciting. Yards, patios, and windows can host bird feeders of all sizes. In fact, 1.5 million Americans enjoy feeding birds because they are responsive and easy to attract.

Bird feeding stations can be as simple as placing seed on the ground or as complicated as species-specific feeders. Cardinals, dark-eyed juncos, purple finches, and American goldfinches are just a few native species that will show up at a backyard feeder.

“When you put out a bird feeder, be sure to place it near shrubs or trees so the bird has cover,” advised Cordell. “Birds also need water, so replenishing a watering station throughout the winter will really help them.”

Cordell said backyard birding is an especially valuable experience for those who are less mobile, such as nursing home residents.

“For people who don’t have the luxury of getting out in the winter, a bird feeder in plain view outside of a window will make a huge positive difference in their quality of life,” Cordell said. “Put out a feeder, keep it filled, and even put a bird I.D. poster next to their window. It’ll give that person something beautiful to look at every day.”

To find out more about birds in Missouri, visit on.mo.gov/1OwdBim.



Northern cardinal



Northern pintail



American goldfinch

Nature Center Programs

Sometimes it's difficult to decide what to do. That's when the Missouri Department of Conservation's interpretive centers come in handy. Twelve facilities across the state, including nature centers, fish hatcheries, and shooting ranges, provide scheduled programs for all levels of ability and skill.

"Our nature centers are purposed to help people discover nature, no matter the time of the year or the weather," said Sara Turner, manager of the Cape Girardeau Conservation Nature Center. "We teach many focused skills like building bird houses, tree identification, and how to tap a maple tree. But our facilities also provide trails and exhibits where visitors can come and go and get a general nature experience at their leisure."

Joy Martin of Winona takes her four children, ages 1, 3, 6, and 8, to Twin Pines Conservation Education Center year-round, but especially in the winter months. Specifically, she appreciates the center's story-time program for her littlest children and the Nature Nuts program for her older children, which are scheduled simultaneously. However, she said there are many things to do outside of the regularly scheduled programs.

"They have a really large area with several activities, from imagination games, learning activities about what animals are in our area, and their story times are very good," Martin said. "They also really care about us and it doesn't matter how many kids are there they always want to see us and help us with anything."

Most recently, Martin said she and her children learned how to cook game meat around the campfire at Twin Pines.

"Then they all got to eat what they cooked," she said. "It was really fun for them."

The Department's nature centers are located in Blue Springs, Cape Girardeau, Jefferson City, Kansas City, Springfield, St. Louis, and Winona. Interpretive centers, fish hatcheries, and staffed gun ranges also provide nature programs for the public. Schedules for these no-cost events at the Department's nature and interpretive centers are located online at mdc.mo.gov/events.

With programs to develop nature art skills, bird watching, fishing, hiking, hunting, and even bow-making, there are activities to meet nearly everyone's needs.

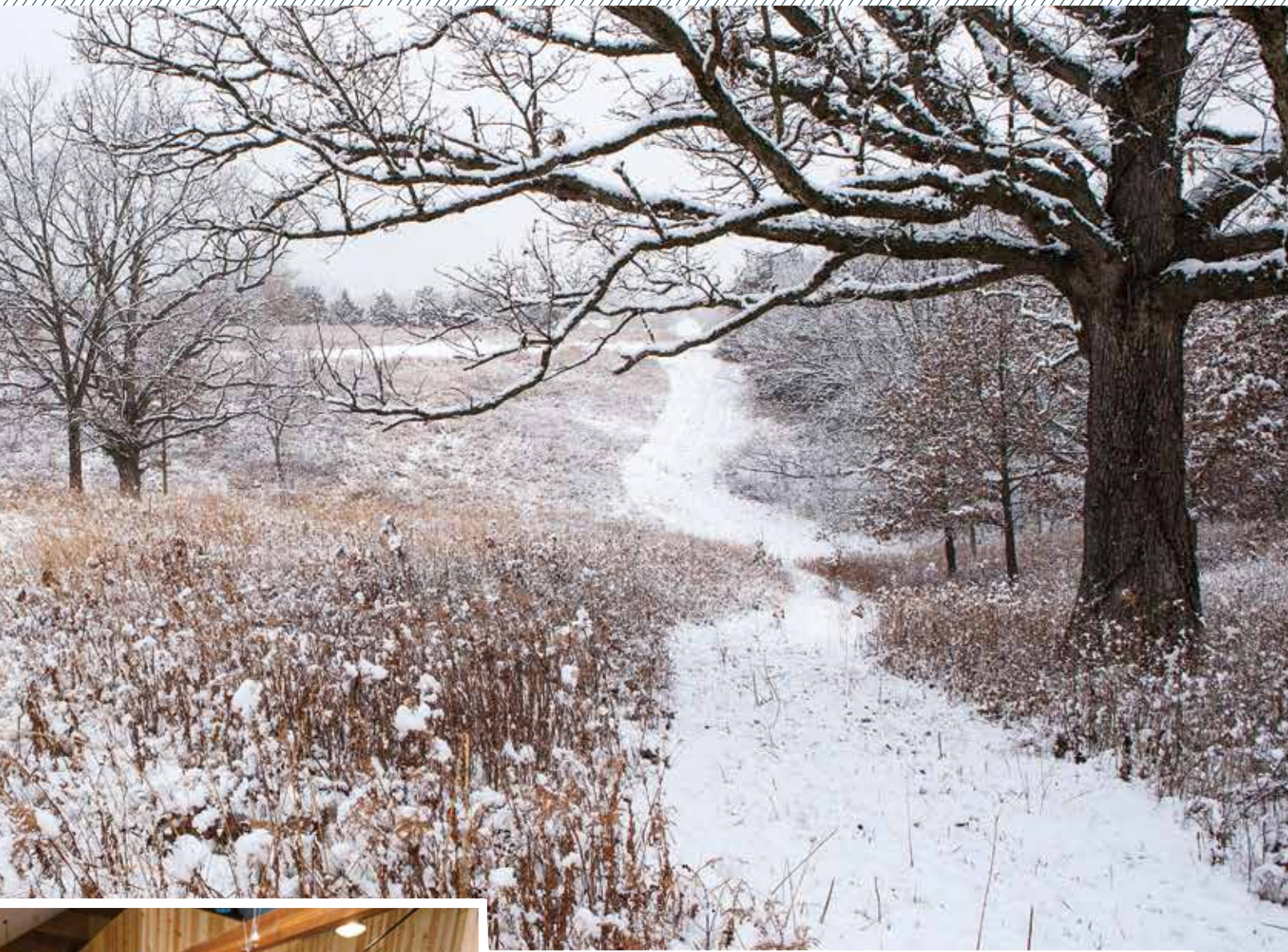


Runge Nature Center, Jefferson City

Missouri's nature centers offer nature activities of all sorts, from guided programs to independent opportunities to explore trails and exhibits.



SNOWY LANDSCAPE: DAVID STONNER; KIDS WITH FURS: DAVID STONNER; KIDS OUTDOORS: JAMES FASHING





"You just feel so energized. You leave filled with vitamin 'N,' the nature vitamin. Hiking imparts a general sense of wellbeing."

Take a Hike

If you hang up your hiking boots when temperatures plunge below freezing, you are missing many wonderful opportunities to see Missouri's outdoor spaces at their most splendid.

While hiking is viewed as a respite from the stress of modern life, winter hiking especially is a way to experience real solitude. Not only are the trails less crowded, Missouri's conservation areas and state parks are exquisite when overlaid with silvery drifts of snow. Winter hiking also is a great way to get some exercise while avoiding annoying insects.

People who may feel more comfortable going with a group can contact a nearby Missouri Department of Conservation Nature Center, since each one offers various opportunities to explore the outdoors.

Darlene Clark and Dennis Mobrce often join Runge Nature Center's Hiking Club in Jefferson City. On one winter trek, Mobrce noticed an interesting phenomenon under an ice sheet overlaying Turkey Creek.

"You could see air bubbles going by. It was like a lava lamp," he said.

Clark almost never misses a hike. "In winter you can see frozen waterfalls, and that's awesome," she said.

Both enjoy winter's stark beauty. With the leaves off the trees, it's easier to see the outline of the landscape.

"You can see the rock formations," Clark said.

"And sometimes you can see your breath," interjected Linda Tremain, a Department volunteer who frequently leads hiking groups.

"It's a different kind of beauty," Clark added.

"You just feel so energized," Bruce Berger, another Runge Nature Center volunteer, added. "You leave filled with vitamin 'N,' the nature vitamin. Hiking imparts a general sense of wellbeing."

Walking isn't the only activity you can engage in on a winter hike. Many people find they enjoy geocaching and letterboxing. With geocaching, participants use a GPS receiver to hide waterproof containers, called "caches," for seekers to find. Letterboxing is a similar hobby that combines elements of orienteering, art, and puzzle solving. Clues are printed in catalogs, found on the web, or discovered by word-of-mouth.

A winter hike is also an excellent time to search for shed deer antlers, identify birds and mushrooms, and keep a keen eye out for frost flowers, which aren't really flowers at all. Delicate ice crystal ribbons form on the lower stems of a few species of Missouri native plants to make frost flowers.

Here are a few tips to make a winter hike safe and comfortable:

- Dress like an onion — in layers. You may feel chilled at the trail head, but after 15 minutes of brisk movement, you will be surprised at how warm you feel.
- Remember that cotton, once wet, will not keep you warm. Wool is a good alternative. It will keep you warm even when wet.
- Bring appropriate safety gear. It's always a good idea to have a trail map, first aid kit, compass, multitool, hand-warming packets, and a headlamp.
- Pay attention to the weather, and be prepared to turn back if conditions aren't favorable.
- Carry a water bottle and stay hydrated.

With a little bit of preparation, trail hiking is easily a four-season activity. Visit mdc.mo.gov/atlas to find a conservation area near you.

Let It Snow

The perfect time to be a nature detective is right after a hard rain or snow. Like us, wildlife must eat, drink, and have shelter of some kind. Knowing those necessities helps determine where to look for signs of wildlife.

Tracks are easy to spot in the snow, but they're also easily seen in fresh mud. If you don't see tracks, look for other animal signs like scat or rub marks on trees. Explore the edges of ponds and streams where you might see tracks of muskrats, raccoons, or even otters. Bring along an animal tracks guide book or take a photo of the tracks you see. When you head back inside, use the photos to figure out what left the tracks.

"This activity is especially good for children because it teaches critical thinking and attention to detail," Sara Turner said. "It's also a skill they'll remember when they're outdoors and use to show off their nature knowledge."

Once children know what they're looking for, this is an activity they'll be eager to repeat every winter.

Another fun activity is making snow ice cream. Place a mixing bowl outside on a patio table or bench and let it fill up with snow. This will ensure the snow is clean. When the bowl is full, bring it in and mix in some cream, sugar, and vanilla. Snow ice cream is a rare treat, which makes it a perfect winter family tradition.

Be Prepared and Have Fun

The most effective way to keep winter outings fun is to be prepared — dress appropriately and warm up sufficiently when you get back indoors. Bundle up in layers with gloves and water-resistant boots because cold feet and hands will send you back indoors prematurely. Put hand warmers in your pockets to help you last even longer in the cold. Once back indoors, warm up with something hot to drink.

Whether you take up winter trout fishing, explore nature center opportunities, or get a real-life education in waterfowl identification, winter in Missouri is too rich with activity to stay indoors. For more fun winter ideas, visit mdc.mo.gov. ▲

***Candice Davis** is a media specialist for the Department of Conservation's southeast region. She lives in Jackson with her family, who also enjoy snow ice cream.*



White-tailed deer track

Snow Ice Cream

Turn fresh-fallen snow into a delicious treat.

- 1 large bowl full of snow
- 1 cup sugar
- 1 tsp. vanilla
- ½ cup heavy cream

Place a bowl outside when it begins to snow and let it fill up. When the bowl is full, bring it in and quickly stir in sugar and vanilla. Then add cream slowly and stir until desired consistency. You may need more or less cream depending on amount of snow used. Serve and enjoy.





THE *Evening* SHOW

BY SCOTT SUDKAMP

This month, head to the nearest brushy area at dusk to catch the woodcock's mating display

“Knowing the place and the hour, you seat yourself under a bush to the east of the dance floor and wait, watching against the sunset for the woodcock’s arrival. He flies in low from some neighboring thicket, alights on the bare moss, and at once begins the overture: a series of queer throaty peents spaced about two seconds apart, and sounding much like the summer call of the nighthawk.”



Male woodcock perform an impressive mating display at dusk in late February and March. To see it for yourself, find a brushy area and listen for a nasally *peent* call, followed by a rolling twittering sound.

JIM RATHER

Brown, tan, and black feathers blend perfectly with the ground cover where woodcock spend most of their time. They're probably closer than you think — perhaps even in your own backyard.

Aldo Leopold penned these words sometime in the late 1930s, and he later included them as part of the essay *Sky Dance* in his classic book *A Sand County Almanac*. Leopold thrilled to the mating display of the American woodcock as a herald of spring, and he and his family spent hours each year enjoying the ornithological show. This fascinating bird still gives nightly performances each spring, and those willing to invest some time and don a jacket are rewarded with a memorable experience in Missouri's outdoors.

The woodcock is an odd bird and largely unknown to most citizens. Its camouflage colors and secretive nature allow it to go undetected, even though it may be living just outside your backdoor. Let's take a look at this bird's unique behaviors and adaptations. Once you know more about the woodcock, I think you'll want to witness the sky dance for yourself.

Physical Characteristics

If you've looked at an American woodcock and thought, "that looks like a shorebird," you're right. Woodcock belong to the same family (*Scolopacidae*) as the sandpipers, phalaropes, and snipe, but they have evolved to occupy upland habitats rather than shorelines. If you've ever spent time watching shorebirds forage, you know most of them have rather long bills with which they probe the mud looking for food. The most striking feature of the woodcock is its long, narrow bill. Woodcock use their bills to probe moist soil in search of earthworms, their primary food. But that's no ordinary bill. Woodcock have a prehensile, or grasping, tip on their bills, allowing it to be opened even when inserted deep into the ground. Along with their unique bill structure, woodcock have another unusual adaptation to a life spent probing the soil: their eyes are set far back on their heads to

JIM RATHER



allow the bird to detect danger while foraging.

The muted browns, tans, and black feathers offer the woodcock excellent concealment, but their feather structure is also important. Because woodcock spend most of their time in young sapling stands and dense, brushy cover, they have developed short, powerful wings that allow them to maneuver expertly through tangles of limbs and vines. The three outermost primary feathers on the wings are narrower than the others, and they produce the twittering sound characteristic of woodcock flight.

Below from left: The prehensile tip on the woodcock's bill allows it to open while inserted deep into the ground; having eyes set back far on their heads allow the woodcock to detect danger while foraging.



ILLUSTRATIONS BY DAVID BESENGER

Woodcock Research — Which Way Did They Go?

Understanding the habitats and travel corridors migrating birds use is difficult. For over 40 years, biologists have used radio telemetry to study movements and habitat use of numerous wildlife species. But the transmitters attached to birds have a pretty limited range, and once migration begins, the radioed bird quickly flies out of range. But recent GPS technology is allowing researchers to follow birds along their route. Dr. David Kremetz and his students at the University of Arkansas have been studying the migratory behavior and habitat use of woodcock using traditional VHF radio transmitters coupled with newer GPS transmitters.

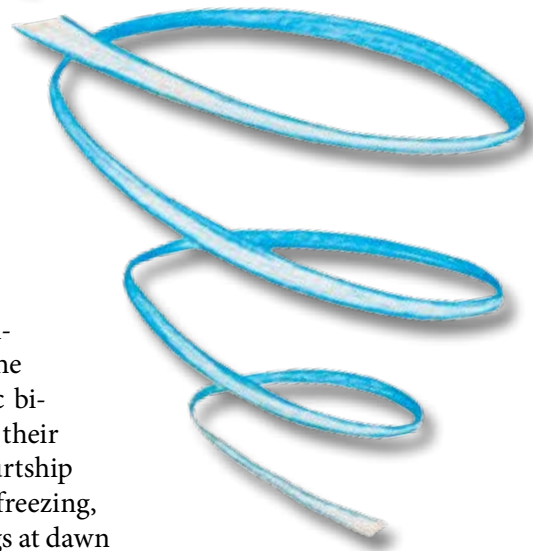
Research work in the 1950s and '60s suggested that woodcock mostly followed the Mississippi River, but Dr. Kremetz's work indicates that may no longer be the case. He and his students speculate that loss of bottom-land hardwood habitats along the Mississippi River may have prompted a shift in migration routes, and woodcock now migrate across Missouri, often using upland hardwoods as stopovers during their journeys. In particular, tracked birds indicate the Show-Me state has important stopover habitats in the River Hills area of northeast Missouri and around Truman Lake in west central Missouri. To view the migration routes used by transmittered birds, go to ruffedgrousesociety.org/woodcockmigration.

Woodcock have a very strong homing instinct to nest near the site where they were hatched, so nesting areas continue to attract woodcock year after year if good habitat conditions remain.



Migration, Courtship, and Nesting

Woodcock are migratory, and may fly several hundred miles at a time as they move from their wintering grounds in the Gulf Coast states and southern Appalachians to breeding areas in the upper Midwest and Great Lakes regions. Among the earliest spring migrants, it's not unusual for these birds to arrive on their northern breeding grounds while snow still blankets the ground. Individual woodcock are also strongly drawn to the area where they were hatched, a characteristic biologists call "natal site fidelity." Upon arrival in their breeding area, male woodcock begin their courtship displays. As long as temperatures are above freezing, males will move to open fields or forest openings at dawn and dusk to perform their courtship rituals. Their display



WOODCOCK PHOTO: S & D & K MASLOWSKI/FLPA/MINDEN PICTURES; ILLUSTRATION BY DAVID BESENGER



Woodcock Trivia

All-you-can-eat buffet? Woodcock have a very rapid digestive process and often eat their weight in earthworms in a single day.

Right brain, left brain, upside-down brain? Woodcock are unique among the bird world for having a brain that's essentially upside down. Scientists believe this is due to the fact that they spend so much time with their head down, probing the ground for food.

A bird by any other name? Woodcock are known by a variety of other names, including timberdoodle, bogsucker, brush snipe, night partridge, hill partridge, and hokumpoke.



begins with the buzzy call described above. After issuing his call note, the male woodcock takes to the air, flying in a series of wide spirals as his wings make a rolling twittering sound. After ascending to a height of several hundred feet, the twittering suddenly ceases, and he tumbles from the sky, almost as if crippled. Then, just as you're sure he's about to crash, the bird levels off and flutters back to the place where he began. Within a few seconds, he calls again and the spectacle repeats. These displays often last 40 to 50 minutes, during which time the male will make about a dozen courtship flights, each lasting about 45 to 60 seconds. Under sufficient moonlight, males may continue their courtship flights periodically throughout the night.

Female woodcock attend the evening performance as well, though they are much less conspicuous. Hens may visit as many as three different males per evening, and often more than one hen visits a singing male on any given night. After mating, hens lay an average of four eggs in a leaf nest on the ground, usually in a stand of early-growth hardwood trees. Incubation lasts 21 days, but if her clutch is lost, hens readily re-nest. Hens continue to visit males' singing grounds during incubation, presumably to ensure she is ready to re-nest quickly if her nest is predated or otherwise lost. Woodcock have a very strong homing instinct to nest near the site where they were hatched, so nesting areas continue to attract woodcock year after year if good habitat conditions remain.

Woodcock chicks are precocial, meaning they hatch feathered, with their eyes open, and ready to leave the nest immediately. Their diet of invertebrates — worms, grubs, and bugs — is high in protein and fuels rapid growth. By day

18, woodcock chicks can make short flights, and at four to five weeks they make long, sustained flights and soon after disperse from the brooding area.

With the coming of autumn, woodcock begin their southward migration. Though a few will begin their journey in September, migration mostly occurs in October and November, when large numbers migrate with approaching cold fronts on strong northerly winds. Woodcock are low flyers, cruising at a height of about 50 feet. Strong fall migratory pulses can literally fill habitats overnight as the birds settle into brushy cover to feed and rest.

Harbinger of Spring

If you're experiencing a serious case of cabin fever after a long winter spent indoors, why not witness the sky dance for yourself? Woodcock can be found advertising their presence by late February in southern Missouri, and by March they should be giving regular performances across the state. Find a brushy area and get outside right at dusk and listen for the buzzy *peent* call of a male woodcock. Once you've found a good area, pack along a lawn chair, a blanket, and maybe a thermos of hot chocolate and just sit quietly. It really is quite a show, and a sure sign that spring is not far off! ▲

At the time of writing, Scott Sudkamp was serving a two-year special assignment as the Department's small game coordinator. He has since returned to his previous position as a private land conservationist, serving Bates and Vernon counties. His professional interests include upland game ecology, woodland restoration, and the use of fire and grazing to manage grasslands and prairies.

Woodcock are masters of disguise. Left: Hens typically lay four mottled brown eggs. Incubations lasts 21 days. Right: Woodcock chicks hatch fully feathered, eyes open, and ready to leave the nest.

Common Goldeneye

I WAS IN a photo blind on a blustery cold February morning when suddenly a male goldeneye landed in front of me. Thanks to the blind, he was completely unaware of my presence as he continued to dive under the frigid water in search of food.

The common goldeneye (*Bucephala clangula*) is a medium-sized duck, which got its name from its brilliant yellow iris. It's also known as the "whistler," as it produces a sound similar to whistling during flight. Male common goldeneyes have blackish, iridescent green heads while females have chocolate-brown heads. They are found in lakes and rivers throughout the northern U.S. and across Canada.

Although it can dive to depths of 20 feet, it prefers the shallow water of the shoreline, where it forages for a wide variety of food, such as mollusks and fish. It can dive for about 25 seconds on average, using its feet and tail for propulsion and steering.

Common goldeneye males perform a spectacular courtship ritual to attract a mate. The display includes throwing back his head, kicking the water, and calling. Once paired, the male tends to the female, driving away other males from her nesting site. The male continues to guard his mate while she lays eggs, but abandons her soon after clutch completion.

The common goldeneye nests in tree cavities in mature forests. A female often lays eggs in the nest of another female, especially in nest boxes located near a pond, lake, or river. Sometimes she may use an abandoned woodpecker hole. She lays eight to 12 eggs, and the incubation period is about 30 days. The young jumps from the nest within two days of hatching and follows their mother to the water. Once they leave the nest, the ducklings can feed themselves but stay near an adult for protection.

As a photographer, when your subject is wildlife, anything can go wrong even with a well-thought-out plan. I often spend countless hours researching areas, waiting and anticipating, and end up with nothing to show for it. So when the goldeneye landed right in front of my blind on that bitterly cold morning, I was excited for the photo opportunity.

While it continued to feed, a small group of female goldeneye flew over as they prepared to land in a small pool of open water. The male immediately stretched his head forward and snapped it upward, pointing his bill skyward and kicking the water with his feet. I was perplexed when I saw this behavior until I realized he was putting on a show for the ladies.

Unfortunately, the females departed soon after. That didn't dampen his spirit, as he continued to forage for food and ward off seagulls that continued to steal his meal. I guess it was a typical day for him, but for me it was a day to remember.

—Story and photograph by Noppadol Paothong

 600mm lens +2.0 teleconverter • f/11 • 1/200 sec • ISO 800

We help people discover nature through our online field guide. Visit on.mo.gov/1M3cWgI to learn more about Missouri's plants and animals.





Mint Spring Conservation Area

This small Gasconade County area offers opportunities for wildlife viewing and nature study near a spring-fed stream and seep.

MINT SPRING CONSERVATION Area, purchased in 1981, is managed to preserve its natural seep and provide the public opportunities for viewing and studying flora and fauna native to oak-hickory forest. Nearby natural springs keep the small creek and waterfall flowing all year, even during periods of drought. Due to the area's small size of 43 acres and proximity to nearby residences, it is not open to hunting of any kind.

The area is almost entirely woodland or forest, composed of oak and hickory, except for the sandstone glade in the northwest corner. Forest thinnings have been conducted to improve the health and vigor of trees left standing. Removing small trees and stimulating the forbs, wildflowers, and warm-season grasses already present has opened the sandstone glade. Typical wildlife on the area includes deer, turkey, squirrel, rabbit, and a wide variety of songbirds.

Mint Springs Seep Natural Area is also found on the property. A seep is a naturally occurring wet place where groundwater reaches the surface from an underground aquifer. Many parts of Missouri have karst topography, or soluble limestone or dolomite, that allows for the drainage of water underground into a system of groundwater aquifers. In spring, when the seep at Mint Spring is at maximum flow, the bottomland becomes saturated and branches into several small streams. Various springs upstream from the property feed the stream that flows year-round, and they all eventually feed the Bourbeuse River.

Mint Spring is open to the public from 4 a.m. to 10 p.m. daily. Facilities include a parking



📷 17-40mm lens • f/16 • 1.3 sec • ISO 50 | by Noppadol Paothong

lot and a footpath to the spring-fed waterfall. Just north of this conservation area is Mint Spring Access, which provides a boat launch to the Bourbeuse River. The ramp can accommodate a vehicle and trailer, but this portion of the river is fairly shallow and best navigated by canoe.

—Aaron Holsapple, area manager



Mint Spring Conservation Area

Recreation Opportunities: Birding, wildlife viewing

Unique Features: Woodland, forest, spring-fed stream and waterfall, Mint Spring Seep Natural Area

For More Information: Call 573-815-7900 or visit mdc.mo.gov/a8110



MDC

DISCOVER nature



To find more events near you, call your regional office (phone numbers on Page 3), or visit mdc.mo.gov and choose your region.

MAPLE SUGAR FESTIVAL

FEB. 6 • SATURDAY • 10 A.M.–3 P.M.

*St. Louis Region, Rockwoods Reservation, 2751 Glencoe Road, Wildwood, MO 63038
No registration required, call 636-458-2236 for more information*

All ages, families

Venture outdoors to Rockwoods Reservation and experience nature at its sweetest. Tap trees and collect sap, boil the sap down, and see a more modern method of making this delicious syrup.

WOMEN'S TRAPPING WORKSHOP

FEB. 6 AND 7 • SATURDAY AND SUNDAY • 8:30 A.M.–4:00 P.M.

Northwest Region, Nodaway Valley Conservation Area, 21999 State Hwy B, Maitland, MO 64466

*Registration required, call 816-271-3100
Ages 16 and older*

We will set traps and skin, dry, and stretch pelts. Overnight accommodations available and meals provided for participants. Equipment is provided.

SELECTING, MOUNTING, AND ZEROING SCOPES

FEB. 18 • THURSDAY • 6–9 P.M.

Kansas City Region, Parma Woods Shooting Range and Outdoor Education Center, 15900 NW River Rd., Parkville, MO 64152

Registration required, call 816-891-9941

Ages 11 and older

With literally thousands of options, it can be difficult to choose the right scope. In this seminar, we will talk about how to select the right optic for you, options for mounting, and how to mount it. Then we'll discuss how to bore sight and zero your new scope.

DISCOVER NATURE — FIREARMS CARE AND CLEANING

FEB. 20 • SATURDAY • 8:30–11:30 A.M.

Southwest Region, Andy Dalton Shooting Range and Outdoor Education Center, 4895 N. Farm Road 61, Ash Grove, MO 65604

*Registration required, call 417-742-4361
All ages*

This program will teach the basics of cleaning and caring for your firearms, as well as provide tips and techniques for all aspects of firearm maintenance. You may bring your own unloaded firearm to class or use ours.

WOMEN'S WINTER TROUT FISHING

FEB. 20 • SATURDAY • 9–11:30 A.M.

Southeast Region, Cape Girardeau Conservation Nature Center, 2289 County Park Drive, Cape Girardeau, MO 63701

*Registration required, beginning Feb. 2. Call 573-290-5218
Ages 12 and older*

We will gather at Rotary Lake in Jackson City Park to learn some tricks and techniques for catching rainbow trout. Participants must have a valid Missouri fishing permit. A trout permit is required if keeping your catch.

CONSERVATION KEEPER: SNAKES

FEB. 20 • SATURDAY • 1–2 P.M.

Northeast Region, Northeast Regional Office, 3500 S. Baltimore, Kirksville, MO 63501

No registration required, call 660-785-2420 for more information

All ages

Learn about the different snakes that call Missouri home, how to identify them, and which are venomous. There will be several snakes on display.

YOUTH POLLINATOR HABITAT PROGRAM

FEB. 27 • SATURDAY • 1–3 P.M.

Central Region, A.L. Gustin Golf Course, 18 E. Stadium Blvd., Columbia, MO 65203

Registration required by Feb. 20. Call 660-886-7447, ext. 310

All ages, families and groups

The Missouri Department of Conservation, Quail Forever, Pheasants Forever, and DuPont Pioneer invites kids and their families to help create pollinator habitat by planting pollinator field seeds at A.L. Gustin Golf Course in Columbia. Participants will learn about pollinators through several hands-on activities, including planting native plants on the golf course grounds. Hot chocolate will be provided and a limited supply of free t-shirts will be available to commemorate your contribution to the pollinators and birds.



Subscribe online • on.mo.gov/1E6osBA • Free to Missouri households



I Am Conservation

Allan Appell has been committed to forest management on his land in Henry County for four decades. This commitment led to being named Missouri State Tree Farmer of the Year in 2000, and it earned him a second nomination in 2012. That 2012 nomination by Department forestry staff described him this way: "Mr. Appell is refreshing to work with as a tree farmer because of his enthusiasm. Even at 87 years old, he keeps forestry staff on their toes with all the work he wants to do on his property." Appell does much of the management work himself with just the help of one hired hand. "I'd worked in an office most of my life, and I would come down here on weekends and be out in the open," said Appell. "I love being out in the open." Since becoming a Certified Tree Farmer in 1975, Appell has completed over 200 acres of timber stand improvement and has planted more than 25 acres of trees. He's also committed to habitat diversity and is currently restoring two glades and two savannas for better quail habitat. "The thing I'm most proud of now is the 60 acres we have restored to native prairie grass," said Appell. He is also an ambassador for the Tree Farm Program and Forest Management, frequently hosting tours of his farm for local school kids, and has traveled throughout the country and around the world promoting forest management. —*photograph by David Stonner*